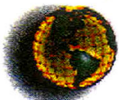
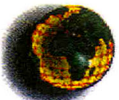


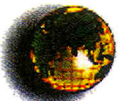
What do I need to know to get my GPS into correct operation?



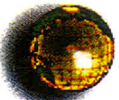
Select a coordinate system. We usually suggest using either the Universal Transverse Mercator System (UTM) or latitude/longitude. Using UTM results in easier plotting on the USGS 7.5' quadrangle maps. The coordinate system displayed by your GPS is usually just a position format selection on your unit's navigation set up page.



Select the correct horizontal datum. Most GPS units default to a datum called the World Geodetic System of 1984 (WGS84). However, most USGS maps are referenced to a different datum, the North American Datum of 1927 (NAD27). A few USGS maps are set to the North American Datum of 1983 (NAD83) which is similar to WGS84. Check the map information at the lower left corner of the USGS 7.5' quadrangle to determine the correct datum used in the making of the map. Correct datum is especially important if you are using the UTM coordinate system.



Be aware that the vertical heights displayed by your recreational GPS receiver will not agree well with USGS map elevations. The main reasons for this discrepancy is the inherent poor fix geometry available for vertical determinations (the earth is always blocking some of the desired satellites) and the use of different reference surfaces for the vertical measurement. **DO NOT USE GPS ELEVATIONS FOR CRITICAL NAVIGATION DECISIONS.**



Select which "North" your GPS receiver will use as the zero degree reference. The default in your receiver is probably true north = 0 degrees. You can also select magnetic north = 0 degrees or grid north (north-south lines of the UTM grid) = 0 degrees. Many users select magnetic north as zero degrees so they can follow a compass bearing without converting the azimuth to true north. Many GPS units automatically calculate the local magnetic variation (declination) for the fix time and date.

For additional information on "The Universal Transverse Mercator (UTM) Grid" see USGS fact sheet 142-97 at <http://mapping.usgs.gov/mac/isb/pubs/factsheets>. No cost downloadable programs -- Tri_con (Windows 95) or Geocon (DOS) -- to convert UTM coordinates to latitude/longitude are available at <http://rockyweb.cr.usgs.gov/software>.

For further questions regarding GPS technology, contact:

U.S. Geological Survey

Phone: 1-888-ASK-USGS

Web: <http://ask.usgs.gov>

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